

Report Date:
14-Jan-19 12:59

Laboratory Report SC52773

Gulf Oil L.P.
281 Eastern Avenue
Chelsea, MA 02150
Attn: Andrew P. Adams

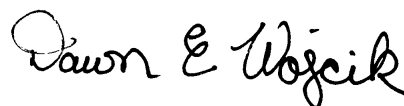
Project: Gulf Terminal - Chelsea, MA
Project #: Gulf Chelsea

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87936
Maine # MA138
New Hampshire # 2972/2538
New Jersey # MA011
New York # 11393
Pennsylvania # 68-04426/68-02924
Rhode Island # LAO00348
USDA # P330-15-00375
Vermont # VT-11393



Authorized by:
Dawn Wojcik
Laboratory Director



Eurofins Spectrum Analytical holds primary certification in the State of Massachusetts for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of Massachusetts does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.

Please note that this report contains 24 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Eurofins Spectrum Analytical, Inc.

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Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

Sample Summary

Work Order: SC52773
Project: Gulf Terminal - Chelsea, MA
Project Number: Gulf Chelsea

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Sampled</u>	<u>Date Received</u>
SC52773-01	Outfall 003	Surface Water	19-Dec-18 13:15	20-Dec-18 16:30
SC52773-02	Trip Blank	Trip Blank	19-Dec-18 00:00	20-Dec-18 16:30

CASE NARRATIVE:

Data has been reported to the RDL. This report excludes estimated concentrations detected below the RDL and above the MDL (J-Flag).

All non-detects and all results below the reporting limit are reported as "<" (less than) the reporting limit in this report.

The samples were received 1.6 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group. If method or program required MS/MSD/Dup were not performed, sufficient sample was not provided to the laboratory.

Analyses for Total Hardness, pH, and Total Residual Chlorine fall under the state of Pennsylvania code Chapter 252.6 accreditation by rule.

January 14, 2019 Report Revision Case Narrative:

This report has been revised to remove 2-Methylnaphthalene.

See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.

E1664A**Laboratory Control Samples:**

CC19445-LCS

A Blank spike was performed instead of a matrix spike
Oil and Grease by EPA 1664A

CC19445-BLK

A Blank spike was performed instead of a matrix spike
Oil and Grease by EPA 1664A

CC19445-LCSD

A Blank spike was performed instead of a matrix spike
Oil and Grease by EPA 1664A

SW8260C**Laboratory Control Samples:**

CC19490-LCS

Laboratory Control Samples:CC19490-LCS

A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.

% 1,2-dichlorobenzene-d4
% Bromofluorobenzene
% Dibromofluoromethane
% Toluene-d8
1,1,1,2-Tetrachloroethane
1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane
1,1-Dichloroethane
1,1-Dichloroethene
1,1-Dichloropropene
1,2,3-Trichlorobenzene
1,2,3-Trichloropropane
1,2,4-Trichlorobenzene
1,2,4-Trimethylbenzene
1,2-Dibromo-3-chloropropane
1,2-Dibromoethane
1,2-Dichlorobenzene
1,2-Dichloroethane
1,2-Dichloropropane
1,3,5-Trimethylbenzene
1,3-Dichlorobenzene
1,3-Dichloropropane
1,4-Dichlorobenzene
1,4-dioxane
2,2-Dichloropropane
2-Chlorotoluene
2-Hexanone
2-Isopropyltoluene
4-Chlorotoluene
4-Methyl-2-pentanone
Acetone
Acrylonitrile
Benzene
Bromobenzene
Bromochloromethane
Bromodichloromethane
Bromoform
Bromomethane
Carbon Disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane
Chloroform
Chloromethane
cis-1,2-Dichloroethene
cis-1,3-Dichloropropene
Dibromochloromethane
Dibromomethane
Dichlorodifluoromethane
Ethyl ether
Ethylbenzene
Hexachlorobutadiene
Isopropylbenzene
m&p-Xylene
Methyl ethyl ketone

SW8260C

Laboratory Control Samples:

CC19490-LCS

A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.

Methyl t-butyl ether (MTBE)
Methylene chloride
Naphthalene
n-Butylbenzene
n-Propylbenzene
o-Xylene
p-Isopropyltoluene
sec-Butylbenzene
Styrene
tert-Butylbenzene
Tetrachloroethene
Tetrahydrofuran (THF)
Toluene
trans-1,2-Dichloroethene
trans-1,3-Dichloropropene
trans-1,4-dichloro-2-butene
Trichloroethene
Trichlorofluoromethane
Trichlorotrifluoroethane
Vinyl chloride

CC19490-BLK

A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.

% 1,2-dichlorobenzene-d4
% Bromofluorobenzene
% Dibromofluoromethane
% Toluene-d8
1,1,1,2-Tetrachloroethane
1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane
1,1-Dichloroethane
1,1-Dichloroethene
1,1-Dichloropropene
1,2,3-Trichlorobenzene
1,2,3-Trichloropropane
1,2,4-Trichlorobenzene
1,2,4-Trimethylbenzene
1,2-Dibromo-3-chloropropane
1,2-Dibromoethane
1,2-Dichlorobenzene
1,2-Dichloroethane
1,2-Dichloropropane
1,3,5-Trimethylbenzene
1,3-Dichlorobenzene
1,3-Dichloropropane
1,4-Dichlorobenzene
1,4-dioxane
2,2-Dichloropropane
2-Chlorotoluene
2-Hexanone
2-Isopropyltoluene
4-Chlorotoluene
4-Methyl-2-pentanone
Acetone
Acrylonitrile
Benzene
Bromobenzene
Bromochloromethane
Bromodichloromethane
Bromoform
Bromomethane
Carbon Disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane
Chloroform
Chloromethane
cis-1,2-Dichloroethene
cis-1,3-Dichloropropene
Dibromochloromethane
Dibromomethane
Dichlorodifluoromethane
Ethyl ether
Ethylbenzene
Hexachlorobutadiene
Isopropylbenzene
m&p-Xylene
Methyl ethyl ketone
Methyl t-butyl ether (MTBE)
Methylene chloride

SW8260C

CC19490-BLK

A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.

Naphthalene
n-Butylbenzene
n-Propylbenzene
o-Xylene
p-Isopropyltoluene
sec-Butylbenzene
Styrene
tert-Butylbenzene
Tetrachloroethene
Tetrahydrofuran (THF)
Toluene
trans-1,2-Dichloroethene
trans-1,3-Dichloropropene
trans-1,4-dichloro-2-butene
Trichloroethene
Trichlorofluoromethane
Trichlorotrifluoroethane
Vinyl chloride

CC19490-LCSD

A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.

% 1,2-dichlorobenzene-d4
% Bromofluorobenzene
% Dibromofluoromethane
% Toluene-d8
1,1,1,2-Tetrachloroethane
1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane
1,1-Dichloroethane
1,1-Dichloroethene
1,1-Dichloropropene
1,2,3-Trichlorobenzene
1,2,3-Trichloropropane
1,2,4-Trichlorobenzene
1,2,4-Trimethylbenzene
1,2-Dibromo-3-chloropropane
1,2-Dibromoethane
1,2-Dichlorobenzene
1,2-Dichloroethane
1,2-Dichloropropane
1,3,5-Trimethylbenzene
1,3-Dichlorobenzene
1,3-Dichloropropane
1,4-Dichlorobenzene
1,4-dioxane
2,2-Dichloropropane
2-Chlorotoluene
2-Hexanone
2-Isopropyltoluene
4-Chlorotoluene
4-Methyl-2-pentanone
Acetone
Acrylonitrile
Benzene
Bromobenzene
Bromochloromethane
Bromodichloromethane
Bromoform
Bromomethane
Carbon Disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane
Chloroform
Chloromethane
cis-1,2-Dichloroethene
cis-1,3-Dichloropropene
Dibromochloromethane
Dibromomethane
Dichlorodifluoromethane
Ethyl ether
Ethylbenzene
Hexachlorobutadiene
Isopropylbenzene
m&p-Xylene
Methyl ethyl ketone
Methyl t-butyl ether (MTBE)
Methylene chloride

SW8260C

CC19490-LCSD

A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.

Naphthalene
n-Butylbenzene
n-Propylbenzene
o-Xylene
p-Isopropyltoluene
sec-Butylbenzene
Styrene
tert-Butylbenzene
Tetrachloroethene
Tetrahydrofuran (THF)
Toluene
trans-1,2-Dichloroethene
trans-1,3-Dichloropropene
trans-1,4-dichloro-2-butene
Trichloroethene
Trichlorofluoromethane
Trichlorotrifluoroethane
Vinyl chloride

SW8260C.

Laboratory Control Samples:

CC19490-LCS

A blank MS/MSD was analyzed with this batch.

Ethanol

CC19490-BLK

A blank MS/MSD was analyzed with this batch.

Ethanol

CC19490-LCSD

A blank MS/MSD was analyzed with this batch.

Ethanol

CC19490-MS

A blank MS/MSD was analyzed with this batch.

Ethanol

CC19490-MSD

A blank MS/MSD was analyzed with this batch.

Ethanol

SW8270D (SIM)

Laboratory Control Samples:

CC17546-LCS

This parameter is outside laboratory lcs/lcsd specified recovery limits.

% Nitrobenzene-d5
Naphthalene

SW8270D (SIM)

Laboratory Control Samples:

CC17546-LCS

This parameter is outside laboratory rpd specified recovery limits.

% Nitrobenzene-d5
Naphthalene

CC17546-LCSD

This parameter is outside laboratory lcs/lcsd specified recovery limits.

% Nitrobenzene-d5
2-Methylnaphthalene
Naphthalene

This parameter is outside laboratory rpd specified recovery limits.

% Nitrobenzene-d5
Naphthalene

CC17546-MS

This parameter is outside laboratory rpd specified recovery limits.

% 2-Fluorobiphenyl
% Nitrobenzene-d5
Acenaphthene
Benzo(ghi)perylene
Dibenz(a,h)anthracene
Fluoranthene
Fluorene
Indeno(1,2,3-cd)pyrene
Naphthalene
Pyrene

CC17546-MSD

This parameter is outside laboratory ms/msd specified recovery limits.

Benzo(ghi)perylene
Dibenz(a,h)anthracene
Indeno(1,2,3-cd)pyrene

This parameter is outside laboratory rpd specified recovery limits.

% 2-Fluorobiphenyl
% Nitrobenzene-d5
Acenaphthene
Benzo(ghi)perylene
Dibenz(a,h)anthracene
Fluoranthene
Fluorene
Indeno(1,2,3-cd)pyrene
Naphthalene
Pyrene

Sample Acceptance Check Form

Client: Gulf Oil L.P.
Project: Gulf Terminal - Chelsea, MA / Gulf Chelsea
Work Order: SC52773
Sample(s) received on: 12/20/2018

The following outlines the condition of samples for the attached Chain of Custody upon receipt.

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
Were custody seals present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Were custody seals intact?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Were samples received at a temperature of $\leq 6^{\circ}\text{C}$?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples refrigerated upon transfer to laboratory representative?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were sample containers received intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples properly labeled (labels affixed to sample containers and include sample ID, site location, and/or project number and the collection date)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples accompanied by a Chain of Custody document?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does Chain of Custody document include proper, full, and complete documentation, which shall include sample ID, site location, and/or project number, date and time of collection, collector's name, preservation type, sample matrix and any special remarks concerning the sample?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Did sample container labels agree with Chain of Custody document?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples received within method-specific holding times?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Summary of Hits

Lab ID: SC52773-01

Client ID: Outfall 003

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Oil and Grease by EPA 1664A	< 1.5		1.5	mg/L	E1664A
Total Suspended Solids	52		5.0	mg/L	SM2540D-11

Please note that because there are no reporting limits associated with hazardous waste characterizations or micro analyses, this summary does not include hits from these analyses if included in this work order.

Sample Identification**Outfall 003**

SC52773-01

Client Project #

Gulf Chelsea

Matrix

Surface Water

Collection Date/Time

19-Dec-18 13:15

Received

20-Dec-18

<i>CAS No.</i>	<i>Analyte(s)</i>	<i>Result</i>	<i>Flag</i>	<i>Units</i>	<i>*RDL</i>	<i>MDL</i>	<i>Dilution</i>	<i>Method Ref.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Analyst</i>	<i>Batch</i>	<i>Cert.</i>
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General Chemistry Parameters

pH	7.03	pH	pH Units				1	ASTM D 1293-99B	21-Dec-18 11:30	21-Dec-18 17:58	BD	1816206	X
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Subcontracted AnalysesPrepared by method E1664A*Analysis performed by Phoenix Environmental Labs, Inc. * - MACT007*

Oil and Grease by EPA 1664A	< 1.5	mg/L	1.5	1.5	1.1	E1664A	19-Dec-18 13:15	27-Dec-18 07:54	M-CT007	461365A			
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Prepared by method SM2540D-11*Analysis performed by Phoenix Environmental Labs, Inc. * - MACT007*

Total Suspended Solids	52	mg/L	5.0	5.0	1	SM2540D-11	"	26-Dec-18 07:23	M-CT007	461248A			
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Subcontracted AnalysesPrepared by method SW8260C*Analysis performed by Phoenix Environmental Labs, Inc. * - MACT007*

71-43-2	Benzene	< 0.70	ug/L	0.70	0.70	1	SW8260C	"	24-Dec-18 11:44	M-CT007	461279A		
1634-04-4	Methyl t-butyl ether (MTBE)	< 1.0	ug/L	1.0	1.0	1	"	"	"	"	"		
91-20-3	Naphthalene	< 1.0	ug/L	1.0	1.0	1	"	"	"	"	"		

Surrogate recoveries:

2199-69-1	% 1,2-dichlorobenzene-d4	107		70-130 %			"	"	"	"	"		
460-00-4	% Bromofluorobenzene	91		70-130 %			"	"	"	"	"		
1868-53-7	% Dibromofluoromethane	108		70-130 %			"	"	"	"	"		
2037-26-5	% Toluene-d8	94		70-130 %			"	"	"	"	"		

*Analysis performed by Phoenix Environmental Labs, Inc. * - MACT007*

64-17-5	Ethanol	< 400	ug/L	400	400	1	SW8260C.	"	09-Jan-19 10:09	M-CT007	462669A		
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Subcontracted AnalysesPrepared by method SW3520C*Analysis performed by Phoenix Environmental Labs, Inc. * - MACT007*

50-32-8	Benzo(a)pyrene	< 0.10	ug/L	0.10	0.10	1	SW8270D (SIM)	22-Dec-18	27-Dec-18 02:45	M-CT007	461099A		
91-20-3	Naphthalene	< 0.48	ug/L	0.48	0.48	1	"	"	"	"	"		

Surrogate recoveries:

321-60-8	% 2-Fluorobiphenyl	52		30-130 %			"	"	"	"	"		
4165-60-0	% Nitrobenzene-d5	44		30-130 %			"	"	"	"	"		
98904-43-9	% Terphenyl-d14	31		30-130 %			"	"	"	"	"		

Sample Identification

Trip Blank
SC52773-02

Client Project #
Gulf Chelsea

Matrix
Trip Blank

Collection Date/Time
19-Dec-18 00:00

Received
20-Dec-18

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
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Subcontracted AnalysesSubcontracted AnalysesPrepared by method SW8260C

*Analysis performed by Phoenix Environmental Labs, Inc. * - MACT007*

71-43-2	Benzene	< 0.70		ug/L	0.70	0.70	1	SW8260C	19-Dec-18	24-Dec-18 11:19	M-CT007	461279A	
1634-04-4	Methyl t-butyl ether (MTBE)	< 1.0		ug/L	1.0	1.0	1	"	"	"	"	"	
91-20-3	Naphthalene	< 1.0		ug/L	1.0	1.0	1	"	"	"	"	"	

Surrogate recoveries:

2199-69-1	% 1,2-dichlorobenzene-d4	110			70-130 %			"	"	"	"	"	
460-00-4	% Bromofluorobenzene	86			70-130 %			"	"	"	"	"	
1868-53-7	% Dibromofluoromethane	109			70-130 %			"	"	"	"	"	
2037-26-5	% Toluene-d8	97			70-130 %			"	"	"	"	"	

*Analysis performed by Phoenix Environmental Labs, Inc. * - MACT007*

64-17-5	Ethanol	< 400		ug/L	400	400	1	SW8260C.	"	09-Jan-19 09:47	M-CT007	462669A	
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General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>ASTM D 1293-99B</u>										
Batch 1816206 - General Preparation										
<u>Duplicate (1816206-DUP1)</u>										
pH	7.01		pH Units			7.03			0.3	5
<u>Reference (1816206-SRM1)</u>										
pH	5.99		pH Units		6.00		100	97.5-102.5		
<u>Reference (1816206-SRM2)</u>										
pH	6.04		pH Units		6.00		101	97.5-102.5		

Subcontracted Analyses - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>E1664A</u>										
Batch 461365A - E1664A										
<u>BLK (CC19445-BLK)</u>						<u>Prepared & Analyzed: 27-Dec-18</u>				
Oil and Grease by EPA 1664A	< 1.4	c3	mg/L	1.4	40	BRL	-			
<u>LCS (CC19445-LCS)</u>						<u>Prepared: Analyzed: 27-Dec-18</u>				
Oil and Grease by EPA 1664A	38.70	c3	mg/L	1.4	40	97	85-115			20
<u>LCSD (CC19445-LCSD)</u>						<u>Prepared: Analyzed: 27-Dec-18</u>				
Oil and Grease by EPA 1664A	38.30	c3	mg/L	1.4	40	96	85-115		1.0	20
<u>SM2540D-11</u>										
Batch 461248A - SM2540D-11										
<u>BLK (CC18506-BLK)</u>						<u>Prepared: Analyzed: 26-Dec-18</u>				
Total Suspended Solids	< 5.0		mg/L	5.0	61.3	BRL	-			
<u>DUP (CC18506-DUP)</u>						<u>Source: CC18506</u>				
Total Suspended Solids	< 5.0		mg/L	5.0	61.3	-			NC	
<u>LCS (CC18506-LCS)</u>						<u>Prepared: Analyzed: 26-Dec-18</u>				
Total Suspended Solids	54.00		mg/L	5.0	61.3	88	85-115			
<u>SW8260C</u>										
Batch 461279A - SW8260C										
<u>BLK (CC19490-BLK)</u>						<u>Prepared: Analyzed: 24-Dec-18</u>				
Carbon tetrachloride	ND	c1	ug/L	1.0		ND	-			
cis-1,3-Dichloropropene	ND	c1	ug/L	0.40		ND	-			
Hexachlorobutadiene	ND	c1	ug/L	0.40		ND	-			
Ethylbenzene	ND	c1	ug/L	1.0		ND	-			
Ethyl ether	ND	c1	ug/L	1.0		ND	-			
Dichlorodifluoromethane	ND	c1	ug/L	1.0		ND	-			
Dibromomethane	ND	c1	ug/L	1.0		ND	-			
Dibromochloromethane	ND	c1	ug/L	0.50		ND	-			
Isopropylbenzene	ND	c1	ug/L	1.0		ND	-			
cis-1,2-Dichloroethene	ND	c1	ug/L	1.0		ND	-			
Chloromethane	ND	c1	ug/L	1.0		ND	-			
Chloroform	ND	c1	ug/L	1.0		ND	-			
m&p-Xylene	ND	c1	ug/L	1.0		ND	-			
Chlorobenzene	ND	c1	ug/L	1.0		ND	-			
p-Isopropyltoluene	ND	c1	ug/L	1.0		ND	-			
Carbon Disulfide	ND	c1	ug/L	1.0		ND	-			
Bromomethane	ND	c1	ug/L	1.0		ND	-			
Chloroethane	ND	c1	ug/L	1.0		ND	-			
tert-Butylbenzene	ND	c1	ug/L	1.0		ND	-			
Vinyl chloride	ND	c1	ug/L	1.0		ND	-			
Trichlorofluoromethane	ND	c1	ug/L	1.0		ND	-			
Trichloroethene	ND	c1	ug/L	1.0		ND	-			
trans-1,4-dichloro-2-butene	ND	c1	ug/L	5.0		ND	-			
trans-1,3-Dichloropropene	ND	c1	ug/L	0.40		ND	-			
trans-1,2-Dichloroethene	ND	c1	ug/L	1.0		ND	-			
Toluene	ND	c1	ug/L	1.0		ND	-			
n-Propylbenzene	ND	c1	ug/L	1.0		ND	-			
Tetrachloroethene	ND	c1	ug/L	1.0		ND	-			
Methyl ethyl ketone	ND	c1	ug/L	5.0		ND	-			
Styrene	ND	c1	ug/L	1.0		ND	-			
sec-Butylbenzene	ND	c1	ug/L	1.0		ND	-			
Trichlorotrifluoroethane	ND	c1	ug/L	1.0		ND	-			
o-Xylene	ND	c1	ug/L	1.0		ND	-			

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Subcontracted Analyses - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW8260C										
Batch 461279A - SW8260C										
BLK (CC19490-BLK)	Prepared: Analyzed: 24-Dec-18									
Bromoform	ND	c1	ug/L	1.0			ND	-		
n-Butylbenzene	ND	c1	ug/L	1.0			ND	-		
Methylene chloride	ND	c1	ug/L	1.0			ND	-		
Tetrahydrofuran (THF)	ND	c1	ug/L	2.5			ND	-		
1,1-Dichloroethene	ND	c1	ug/L	1.0			ND	-		
1,2-Dichlorobenzene	ND	c1	ug/L	1.0			ND	-		
1,2-Dibromoethane	ND	c1	ug/L	1.0			ND	-		
1,2-Dibromo-3-chloropropane	ND	c1	ug/L	1.0			ND	-		
1,2,4-Trimethylbenzene	ND	c1	ug/L	1.0			ND	-		
1,2,4-Trichlorobenzene	ND	c1	ug/L	1.0			ND	-		
1,2,3-Trichloropropane	ND	c1	ug/L	1.0			ND	-		
1,2-Dichloroethane	ND	c1	ug/L	1.0			ND	-		
1,1-Dichloropropene	ND	c1	ug/L	1.0			ND	-		
1,2-Dichloropropane	ND	c1	ug/L	1.0			ND	-		
1,1-Dichloroethane	ND	c1	ug/L	1.0			ND	-		
1,1,2-Trichloroethane	ND	c1	ug/L	1.0			ND	-		
1,1,2,2-Tetrachloroethane	ND	c1	ug/L	0.50			ND	-		
1,1,1-Trichloroethane	ND	c1	ug/L	1.0			ND	-		
1,1,1,2-Tetrachloroethane	ND	c1	ug/L	1.0			ND	-		
Bromodichloromethane	ND	c1	ug/L	0.50			ND	-		
1,2,3-Trichlorobenzene	ND	c1	ug/L	1.0			ND	-		
2-Chlorotoluene	ND	c1	ug/L	1.0			ND	-		
Bromochloromethane	ND	c1	ug/L	1.0			ND	-		
Bromobenzene	ND	c1	ug/L	1.0			ND	-		
Acrylonitrile	ND	c1	ug/L	5.0			ND	-		
Acetone	ND	c1	ug/L	5.0			ND	-		
4-Methyl-2-pentanone	ND	c1	ug/L	5.0			ND	-		
4-Chlorotoluene	ND	c1	ug/L	1.0			ND	-		
2-Hexanone	ND	c1	ug/L	5.0			ND	-		
2,2-Dichloropropane	ND	c1	ug/L	1.0			ND	-		
1,4-dioxane	ND	c1	ug/L	100			ND	-		
1,4-Dichlorobenzene	ND	c1	ug/L	1.0			ND	-		
1,3-Dichloropropane	ND	c1	ug/L	1.0			ND	-		
1,3-Dichlorobenzene	ND	c1	ug/L	1.0			ND	-		
1,3,5-Trimethylbenzene	ND	c1	ug/L	1.0			ND	-		
2-Isopropyltoluene	ND	c1	ug/L	1.0			ND	-		
Methyl t-butyl ether (MTBE)	ND	c1	ug/L	1.0			ND	-		
Naphthalene	ND	c1	ug/L	1.0			ND	-		
Benzene	ND	c1	ug/L	0.70			ND	-		
Surrogate: % 1,2-dichlorobenzene-d4	105	c1	ug/L		10		105	70-130		
Surrogate: % Bromofluorobenzene	89	c1	ug/L		10		89	70-130		
Surrogate: % Dibromofluoromethane	102	c1	ug/L		10		102	70-130		
Surrogate: % Toluene-d8	92	c1	ug/L		10		92	70-130		
LCS (CC19490-LCS)	Prepared: Analyzed: 24-Dec-18									
cis-1,3-Dichloropropene	9.962	c1	ug/L	0.40	10		100	70-130		30
m&p-Xylene	19.30	c1	ug/L	1.0	20		96	70-130		30
Isopropylbenzene	9.291	c1	ug/L	1.0	10		93	70-130		30
Hexachlorobutadiene	9.398	c1	ug/L	0.40	10		94	70-130		30
Ethylbenzene	9.238	c1	ug/L	1.0	10		92	70-130		30
Ethyl ether	11.15	c1	ug/L	1.0	10		111	70-130		30

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Subcontracted Analyses - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW8260C										
Batch 461279A - SW8260C										
LCS (CC19490-LCS)						Prepared: Analyzed: 24-Dec-18				
Dichlorodifluoromethane	6.447	c1	ug/L	1.0	10		64	40-160		30
Vinyl chloride	8.137	c1	ug/L	1.0	10		81	70-130		30
Dibromochloromethane	10.01	c1	ug/L	0.50	10		100	70-130		30
n-Butylbenzene	9.411	c1	ug/L	1.0	10		94	70-130		30
cis-1,2-Dichloroethene	9.488	c1	ug/L	1.0	10		95	70-130		30
Chloromethane	7.210	c1	ug/L	1.0	10		72	40-160		30
Chloroform	9.165	c1	ug/L	1.0	10		92	70-130		30
Chloroethane	8.488	c1	ug/L	1.0	10		85	70-130		30
Chlorobenzene	8.889	c1	ug/L	1.0	10		89	70-130		30
Carbon tetrachloride	8.834	c1	ug/L	1.0	10		88	70-130		30
Carbon Disulfide	8.606	c1	ug/L	1.0	10		86	70-130		30
Dibromomethane	9.755	c1	ug/L	1.0	10		98	70-130		30
Tetrachloroethene	8.497	c1	ug/L	1.0	10		85	70-130		30
Bromomethane	6.333	c1	ug/L	1.0	10		63	40-160		30
Trichlorotrifluoroethane	8.971	c1	ug/L	1.0	10		90	70-130		30
Trichlorofluoromethane	8.280	c1	ug/L	1.0	10		83	70-130		30
Trichloroethene	8.929	c1	ug/L	1.0	10		89	70-130		30
trans-1,4-dichloro-2-butene	54.35	c1	ug/L	5.0	50		109	70-130		30
trans-1,3-Dichloropropene	9.602	c1	ug/L	0.40	10		96	70-130		30
trans-1,2-Dichloroethene	9.373	c1	ug/L	1.0	10		94	70-130		30
Methyl ethyl ketone	10.76	c1	ug/L	5.0	10		108	40-160		30
Tetrahydrofuran (THF)	25.38	c1	ug/L	2.5	25		102	70-130		30
Methylene chloride	9.720	c1	ug/L	1.0	10		97	70-130		30
tert-Butylbenzene	9.582	c1	ug/L	1.0	10		96	70-130		30
Styrene	9.930	c1	ug/L	1.0	10		99	70-130		30
sec-Butylbenzene	10.02	c1	ug/L	1.0	10		100	70-130		30
p-Isopropyltoluene	9.667	c1	ug/L	1.0	10		97	70-130		30
o-Xylene	9.817	c1	ug/L	1.0	10		98	70-130		30
n-Propylbenzene	9.377	c1	ug/L	1.0	10		94	70-130		30
1,3-Dichlorobenzene	9.197	c1	ug/L	1.0	10		92	70-130		30
Toluene	9.065	c1	ug/L	1.0	10		91	70-130		30
1,1-Dichloropropene	8.840	c1	ug/L	1.0	10		88	70-130		30
1,2-Dichloroethane	9.139	c1	ug/L	1.0	10		91	70-130		30
1,2-Dichlorobenzene	9.129	c1	ug/L	1.0	10		91	70-130		30
Bromoform	9.910	c1	ug/L	1.0	10		99	70-130		30
1,2-Dibromo-3-chloropropane	9.707	c1	ug/L	1.0	10		97	70-130		30
1,4-Dichlorobenzene	9.078	c1	ug/L	1.0	10		91	70-130		30
1,2,4-Trichlorobenzene	9.383	c1	ug/L	1.0	10		94	70-130		30
1,2-Dichloropropane	9.270	c1	ug/L	1.0	10		93	70-130		30
1,2,3-Trichlorobenzene	9.746	c1	ug/L	1.0	10		97	70-130		30
1,2-Dibromoethane	9.515	c1	ug/L	1.0	10		95	70-130		30
1,1-Dichloroethene	8.829	c1	ug/L	1.0	10		88	70-130		30
1,1-Dichloroethane	9.301	c1	ug/L	1.0	10		93	70-130		30
1,1,2-Trichloroethane	9.498	c1	ug/L	1.0	10		95	70-130		30
1,1,2,2-Tetrachloroethane	9.670	c1	ug/L	0.50	10		97	70-130		30
1,1,1-Trichloroethane	8.995	c1	ug/L	1.0	10		90	70-130		30
1,1,1,2-Tetrachloroethane	9.304	c1	ug/L	1.0	10		93	70-130		30
1,2,3-Trichloropropane	9.291	c1	ug/L	1.0	10		93	70-130		30
Acrylonitrile	10.29	c1	ug/L	5.0	10		103	70-130		30
Bromodichloromethane	9.420	c1	ug/L	0.50	10		94	70-130		30

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Subcontracted Analyses - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW8260C										
Batch 461279A - SW8260C										
LCS (CC19490-LCS)						Prepared: Analyzed: 24-Dec-18				
Bromochloromethane	9.789	c1	ug/L	1.0	10		98	70-130		30
1,2,4-Trimethylbenzene	9.841	c1	ug/L	1.0	10		98	70-130		30
Bromobenzene	9.374	c1	ug/L	1.0	10		94	70-130		30
1,3,5-Trimethylbenzene	9.418	c1	ug/L	1.0	10		94	70-130		30
Acetone	9.175	c1	ug/L	5.0	10		92	40-160		30
4-Methyl-2-pentanone	10.36	c1	ug/L	5.0	10		104	40-160		30
4-Chlorotoluene	9.233	c1	ug/L	1.0	10		92	70-130		30
2-Hexanone	9.898	c1	ug/L	5.0	10		99	40-160		30
2-Chlorotoluene	9.324	c1	ug/L	1.0	10		93	70-130		30
2,2-Dichloropropane	8.928	c1	ug/L	1.0	10		89	70-130		30
1,4-dioxane	177.1	c1	ug/L	100	200		89	40-160		30
1,3-Dichloropropane	9.644	c1	ug/L	1.0	10		96	70-130		30
2-Isopropyltoluene	10.01	c1	ug/L	1.0	10		100	70-130		30
Naphthalene	10.62	c1	ug/L	1.0	10		106	70-130		30
Benzene	9.012	c1	ug/L	0.70	10		90	70-130		30
Methyl t-butyl ether (MTBE)	9.504	c1	ug/L	1.0	10		95	70-130		30
Surrogate: % Toluene-d8	10.21	c1	ug/L		10		102	70-130		
Surrogate: % Dibromofluoromethane	10.65	c1	ug/L		10		106	70-130		
Surrogate: % 1,2-dichlorobenzene-d4	10.10	c1	ug/L		10		101	70-130		
Surrogate: % Bromofluorobenzene	10.35	c1	ug/L		10		104	70-130		
LCSD (CC19490-LCSD)						Prepared: Analyzed: 24-Dec-18				
1,2,3-Trichlorobenzene	9.690	c1	ug/L	1.0	10		97	70-130	0.0	30
1,1,1,2-Tetrachloroethane	9.385	c1	ug/L	1.0	10		94	70-130	1.1	30
1,1,1-Trichloroethane	9.403	c1	ug/L	1.0	10		94	70-130	4.3	30
1,1,2,2-Tetrachloroethane	9.843	c1	ug/L	0.50	10		98	70-130	1.0	30
1,1,2-Trichloroethane	10.02	c1	ug/L	1.0	10		100	70-130	5.1	30
1,1-Dichloropropene	9.822	c1	ug/L	1.0	10		98	70-130	10.8	30
1,1-Dichloroethene	9.422	c1	ug/L	1.0	10		94	70-130	6.6	30
Ethyl ether	10.84	c1	ug/L	1.0	10		108	70-130	2.7	30
Chlorobenzene	9.372	c1	ug/L	1.0	10		94	70-130	5.5	30
n-Butylbenzene	9.749	c1	ug/L	1.0	10		97	70-130	3.1	30
Methylene chloride	9.795	c1	ug/L	1.0	10		98	70-130	1.0	30
Methyl ethyl ketone	10.82	c1	ug/L	5.0	10		108	40-160	0.0	30
m&p-Xylene	19.62	c1	ug/L	1.0	20		98	70-130	2.1	30
Isopropylbenzene	9.845	c1	ug/L	1.0	10		98	70-130	5.2	30
o-Xylene	9.863	c1	ug/L	1.0	10		99	70-130	1.0	30
Ethylbenzene	9.526	c1	ug/L	1.0	10		95	70-130	3.2	30
p-Isopropyltoluene	10.16	c1	ug/L	1.0	10		102	70-130	5.0	30
Dibromomethane	10.27	c1	ug/L	1.0	10		103	70-130	5.0	30
cis-1,3-Dichloropropene	10.53	c1	ug/L	0.40	10		105	70-130	4.9	30
cis-1,2-Dichloroethene	9.486	c1	ug/L	1.0	10		95	70-130	0.0	30
Chloromethane	7.683	c1	ug/L	1.0	10		77	40-160	6.7	30
Chloroform	9.324	c1	ug/L	1.0	10		93	70-130	1.1	30
Chloroethane	9.066	c1	ug/L	1.0	10		91	70-130	6.8	30
Hexachlorobutadiene	9.185	c1	ug/L	0.40	10		92	70-130	2.2	30
trans-1,2-Dichloroethene	9.538	c1	ug/L	1.0	10		95	70-130	1.1	30
1,2,3-Trichloropropane	9.364	c1	ug/L	1.0	10		94	70-130	1.1	30
1,1-Dichloroethane	9.404	c1	ug/L	1.0	10		94	70-130	1.1	30
Vinyl chloride	8.734	c1	ug/L	1.0	10		87	70-130	7.1	30
Trichlorotrifluoroethane	10.01	c1	ug/L	1.0	10		100	70-130	10.5	30

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Subcontracted Analyses - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW8260C										
Batch 461279A - SW8260C										
LCSD (CC19490-LCSD)						Prepared: Analyzed: 24-Dec-18				
Trichlorofluoromethane	9.035	c1	ug/L	1.0	10		90	70-130	8.1	30
Trichloroethene	9.490	c1	ug/L	1.0	10		95	70-130	6.5	30
n-Propylbenzene	9.732	c1	ug/L	1.0	10		97	70-130	3.1	30
trans-1,3-Dichloropropene	9.918	c1	ug/L	0.40	10		99	70-130	3.1	30
Dibromochloromethane	10.08	c1	ug/L	0.50	10		101	70-130	1.0	30
Toluene	9.931	c1	ug/L	1.0	10		99	70-130	8.4	30
Tetrahydrofuran (THF)	25.22	c1	ug/L	2.5	25		101	70-130	1.0	30
Tetrachloroethene	9.892	c1	ug/L	1.0	10		99	70-130	15.2	30
tert-Butylbenzene	9.971	c1	ug/L	1.0	10		100	70-130	4.1	30
Styrene	10.05	c1	ug/L	1.0	10		100	70-130	1.0	30
sec-Butylbenzene	10.44	c1	ug/L	1.0	10		104	70-130	3.9	30
trans-1,4-dichloro-2-butene	55.53	c1	ug/L	5.0	50		111	70-130	1.8	30
1,2-Dichloropropane	10.39	c1	ug/L	1.0	10		104	70-130	11.2	30
2,2-Dichloropropane	9.379	c1	ug/L	1.0	10		94	70-130	5.5	30
1,4-dioxane	197.2	c1	ug/L	100	200		99	40-160	10.6	30
1,4-Dichlorobenzene	9.232	c1	ug/L	1.0	10		92	70-130	1.1	30
1,3-Dichloropropane	9.496	c1	ug/L	1.0	10		95	70-130	1.0	30
Carbon tetrachloride	9.098	c1	ug/L	1.0	10		91	70-130	3.4	30
2-Chlorotoluene	9.718	c1	ug/L	1.0	10		97	70-130	4.2	30
Dichlorodifluoromethane	7.098	c1	ug/L	1.0	10		71	40-160	10.4	30
1,3-Dichlorobenzene	9.470	c1	ug/L	1.0	10		95	70-130	3.2	30
1,2-Dichloroethane	9.578	c1	ug/L	1.0	10		96	70-130	5.3	30
1,2-Dichlorobenzene	9.370	c1	ug/L	1.0	10		94	70-130	3.2	30
1,2-Dibromoethane	9.559	c1	ug/L	1.0	10		96	70-130	1.0	30
1,2-Dibromo-3-chloropropane	10.39	c1	ug/L	1.0	10		104	70-130	7.0	30
1,2,4-Trimethylbenzene	10.07	c1	ug/L	1.0	10		101	70-130	3.0	30
1,2,4-Trichlorobenzene	9.544	c1	ug/L	1.0	10		95	70-130	1.1	30
1,3,5-Trimethylbenzene	9.968	c1	ug/L	1.0	10		100	70-130	6.2	30
Bromochloromethane	9.563	c1	ug/L	1.0	10		96	70-130	2.1	30
Carbon Disulfide	8.972	c1	ug/L	1.0	10		90	70-130	4.5	30
Bromomethane	6.757	c1	ug/L	1.0	10		68	40-160	7.6	30
Bromodichloromethane	9.976	c1	ug/L	0.50	10		100	70-130	6.2	30
2-Hexanone	10.42	c1	ug/L	5.0	10		104	40-160	4.9	30
Bromobenzene	9.545	c1	ug/L	1.0	10		95	70-130	1.1	30
Acrylonitrile	10.14	c1	ug/L	5.0	10		101	70-130	2.0	30
4-Methyl-2-pentanone	10.71	c1	ug/L	5.0	10		107	40-160	2.8	30
Bromoform	10.43	c1	ug/L	1.0	10		104	70-130	4.9	30
4-Chlorotoluene	9.517	c1	ug/L	1.0	10		95	70-130	3.2	30
2-Isopropyltoluene	10.56	c1	ug/L	1.0	10		106	70-130	5.8	30
Acetone	9.739	c1	ug/L	5.0	10		97	40-160	5.3	30
Benzene	9.563	c1	ug/L	0.70	10		96	70-130	6.5	30
Naphthalene	10.75	c1	ug/L	1.0	10		108	70-130	1.9	30
Methyl t-butyl ether (MTBE)	9.611	c1	ug/L	1.0	10		96	70-130	1.0	30
Surrogate: % Bromofluorobenzene	9.919	c1	ug/L		10		99	70-130		
Surrogate: % Dibromofluoromethane	10.24	c1	ug/L		10		102	70-130		
Surrogate: % Toluene-d8	10.39	c1	ug/L		10		104	70-130		
Surrogate: % 1,2-dichlorobenzene-d4	10.03	c1	ug/L		10		100	70-130		

SW8260C

Batch 462669A - SW8260C

BLK (CC19490-BLK)

Prepared: Analyzed: 24-Dec-18

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Subcontracted Analyses - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>SW8260C</u>										
Batch 462669A - SW8260C										
<u>BLK (CC19490-BLK)</u>						<u>Prepared: Analyzed: 24-Dec-18</u>				
Ethanol	ND	c4	ug/L	200			ND	-		
<u>LCS (CC19490-LCS)</u>						<u>Prepared: Analyzed: 24-Dec-18</u>				
Ethanol	213.4	c4	ug/L	200	250		85	70-130		30
<u>LCSD (CC19490-LCSD)</u>						<u>Prepared: Analyzed: 24-Dec-18</u>				
Ethanol	197.7	c4	ug/L	200	250		79	70-130	7.3	30
<u>MS (CC19490-MS)</u>	<u>Source: SC52773-02</u>					<u>Prepared: Analyzed: 09-Jan-19</u>				
Ethanol	237.8	c4	ug/L	200	250	BRL	95	70-130		30
<u>MSD (CC19490-MSD)</u>	<u>Source: SC52773-02</u>					<u>Prepared: Analyzed: 09-Jan-19</u>				
Ethanol	253.0	c4	ug/L	200	250	BRL	101	70-130	6.1	30
<u>SW8270D (SIM)</u>										
Batch 461099A - SW3520C										
<u>BLK (CC17546-BLK)</u>						<u>Prepared: 22-Dec-18 Analyzed: 26-Dec-18</u>				
Chrysene	ND		ug/L	0.50			ND	-		
Phenanthrene	ND		ug/L	0.07			ND	-		
Indeno(1,2,3-cd)pyrene	ND		ug/L	0.10			ND	-		
Fluorene	ND		ug/L	0.50			ND	-		
Pyrene	ND		ug/L	0.50			ND	-		
Dibenz(a,h)anthracene	ND		ug/L	0.10			ND	-		
Benzo(b)fluoranthene	ND		ug/L	0.08			ND	-		
Benzo(k)fluoranthene	ND		ug/L	0.30			ND	-		
Benzo(ghi)perylene	ND		ug/L	0.48			ND	-		
Fluoranthene	ND		ug/L	0.50			ND	-		
Benz(a)anthracene	ND		ug/L	0.06			ND	-		
Anthracene	ND		ug/L	0.50			ND	-		
Acenaphthylene	ND		ug/L	0.30			ND	-		
Acenaphthene	ND		ug/L	0.50			ND	-		
2-Methylnaphthalene	ND		ug/L	0.50			ND	-		
Benzo(a)pyrene	ND		ug/L	0.20			ND	-		
Naphthalene	ND		ug/L	0.50			ND	-		
Surrogate: % Nitrobenzene-d5	10		ug/L		5		10	30-130		
Surrogate: % Terphenyl-d14	76		ug/L		5		76	30-130		
Surrogate: % 2-Fluorobiphenyl	29		ug/L		5		29	30-130		
<u>LCS (CC17546-LCS)</u>						<u>Prepared: 22-Dec-18 Analyzed: 26-Dec-18</u>				
Benzo(b)fluoranthene	6.315		ug/L	0.08	10		63	30-130		20
Benzo(k)fluoranthene	6.628		ug/L	0.30	10		66	30-130		20
Pyrene	6.292		ug/L	0.50	10		63	30-130		20
Phenanthrene	6.216		ug/L	0.07	10		62	30-130		20
Indeno(1,2,3-cd)pyrene	6.352		ug/L	0.10	10		64	30-130		20
Fluorene	5.742		ug/L	0.50	10		57	30-130		20
Fluoranthene	6.368		ug/L	0.50	10		64	30-130		20
Dibenz(a,h)anthracene	7.436		ug/L	0.10	10		74	30-130		20
Chrysene	5.998		ug/L	0.50	10		60	30-130		20
Benz(a)anthracene	5.319		ug/L	0.06	10		53	30-130		20
Anthracene	6.099		ug/L	0.50	10		61	30-130		20
Acenaphthylene	4.296		ug/L	0.30	10		43	30-130		20
Acenaphthene	5.210		ug/L	0.50	10		52	30-130		20
2-Methylnaphthalene	3.523		ug/L	0.50	10		35	30-130		20
Benzo(ghi)perylene	5.874		ug/L	0.48	10		59	30-130		20
Benzo(a)pyrene	5.373		ug/L	0.20	10		54	30-130		20

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Subcontracted Analyses - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>SW8270D (SIM)</u>										
Batch 461099A - SW3520C										
<u>LCS (CC17546-LCS)</u>					<u>Prepared: 22-Dec-18 Analyzed: 26-Dec-18</u>					
Naphthalene	2.777	I, r	ug/L	0.50	10		28	30-130		20
Surrogate: % Terphenyl-d14	3.913		ug/L		5		78	30-130		
Surrogate: % 2-Fluorobiphenyl	1.995		ug/L		5		40	30-130		
Surrogate: % Nitrobenzene-d5	0.9079	I, r	ug/L		5		18	30-130		
<u>LCSD (CC17546-LCSD)</u>					<u>Prepared: 22-Dec-18 Analyzed: 26-Dec-18</u>					
Dibenz(a,h)anthracene	7.372		ug/L	0.10	10		74	30-130	0.0	20
Indeno(1,2,3-cd)pyrene	6.223		ug/L	0.10	10		62	30-130	3.2	20
Benzo(b)fluoranthene	6.038		ug/L	0.08	10		60	30-130	4.9	20
Fluoranthene	6.269		ug/L	0.50	10		63	30-130	1.6	20
Pyrene	6.686		ug/L	0.50	10		67	30-130	6.2	20
Chrysene	6.100		ug/L	0.50	10		61	30-130	1.7	20
Benzo(k)fluoranthene	6.882		ug/L	0.30	10		69	30-130	4.4	20
Benzo(ghi)perylene	5.829		ug/L	0.48	10		58	30-130	1.7	20
Phenanthrene	6.259		ug/L	0.07	10		63	30-130	1.6	20
Benz(a)anthracene	5.337		ug/L	0.06	10		53	30-130	0.0	20
Anthracene	6.390		ug/L	0.50	10		64	30-130	4.8	20
Acenaphthylene	4.296		ug/L	0.30	10		43	30-130	0.0	20
Acenaphthene	5.210		ug/L	0.50	10		52	30-130	0.0	20
2-Methylnaphthalene	2.949	I	ug/L	0.50	10		29	30-130	18.8	20
Fluorene	5.519		ug/L	0.50	10		55	30-130	3.6	20
Naphthalene	1.853	I, r	ug/L	0.50	10		19	30-130	38.3	20
Benzo(a)pyrene	5.789		ug/L	0.20	10		58	30-130	7.1	20
Surrogate: % 2-Fluorobiphenyl	1.939		ug/L		5		39	30-130		
Surrogate: % Terphenyl-d14	3.902		ug/L		5		78	30-130		
Surrogate: % Nitrobenzene-d5	0.5641	I, r	ug/L		5		11	30-130		
<u>MS (CC17546-MS)</u>					<u>Source: CC17546 Prepared: 22-Dec-18 Analyzed: 26-Dec-18</u>					
Benzo(ghi)perylene	3.234	r	ug/L	0.48	10		32	30-130		20
Benzo(k)fluoranthene	3.706		ug/L	0.30	10		37	30-130		20
Chrysene	4.131		ug/L	0.50	10		41	30-130		20
Fluoranthene	5.232	r	ug/L	0.50	10		52	30-130		20
Indeno(1,2,3-cd)pyrene	3.515	r	ug/L	0.10	10		35	30-130		20
Benzo(b)fluoranthene	3.588		ug/L	0.08	10		36	30-130		20
Pyrene	5.444	r	ug/L	0.50	10		54	30-130		20
Dibenz(a,h)anthracene	4.071	r	ug/L	0.10	10		41	30-130		20
Phenanthrene	5.461		ug/L	0.07	10		55	30-130		20
Benz(a)anthracene	3.871		ug/L	0.06	10		39	30-130		20
Anthracene	5.366		ug/L	0.50	10		54	30-130		20
Acenaphthylene	4.862		ug/L	0.30	10		49	30-130		20
Acenaphthene	5.975	r	ug/L	0.50	10		60	30-130		20
2-Methylnaphthalene	4.284		ug/L	0.50	10		43	30-130		20
Fluorene	5.447	r	ug/L	0.50	10		54	30-130		20
Naphthalene	4.516	r	ug/L	0.50	10		45	30-130		20
Benzo(a)pyrene	3.418		ug/L	0.20	10		34	30-130		20
Surrogate: % 2-Fluorobiphenyl	2.207	r	ug/L		5		44	30-130		
Surrogate: % Terphenyl-d14	2.186		ug/L		5		44	30-130		
Surrogate: % Nitrobenzene-d5	1.770	r	ug/L		5		35	30-130		
<u>MSD (CC17546-MSD)</u>					<u>Source: CC17546 Prepared: 22-Dec-18 Analyzed: 26-Dec-18</u>					
Benzo(k)fluoranthene	2.550		ug/L	0.30	7.69231		33	30-130	11.4	20
Chrysene	3.328		ug/L	0.50	7.69231		43	30-130	4.8	20

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Subcontracted Analyses - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>SW8270D (SIM)</u>										
Batch 461099A - SW3520C										
MSD (CC17546-MSD)	Source: CC17546				Prepared: 22-Dec-18 Analyzed: 26-Dec-18					
Dibenz(a,h)anthracene	2.179	m, r	ug/L	0.10	7.69231		28	30-130	37.7	20
Fluoranthene	5.046	r	ug/L	0.50	7.69231		66	30-130	23.7	20
Fluorene	5.185	r	ug/L	0.50	7.69231		67	30-130	21.5	20
Benzo(ghi)perylene	1.913	m, r	ug/L	0.48	7.69231		25	30-130	24.6	20
Phenanthrene	5.189		ug/L	0.07	7.69231		67	30-130	19.7	20
2-Methylnaphthalene	3.987		ug/L	0.50	7.69231		52	30-130	18.9	20
Indeno(1,2,3-cd)pyrene	2.069	m, r	ug/L	0.10	7.69231		27	30-130	25.8	20
Benzo(b)fluoranthene	2.639		ug/L	0.08	7.69231		34	30-130	5.7	20
Benz(a)anthracene	3.378		ug/L	0.06	7.69231		44	30-130	12.0	20
Anthracene	5.053		ug/L	0.50	7.69231		66	30-130	20.0	20
Acenaphthene	5.786	r	ug/L	0.50	7.69231		75	30-130	22.2	20
Pyrene	5.183	r	ug/L	0.50	7.69231		67	30-130	21.5	20
Acenaphthylene	4.635		ug/L	0.30	7.69231		60	30-130	20.2	20
Benzo(a)pyrene	2.425		ug/L	0.20	7.69231		32	30-130	6.1	20
Naphthalene	4.286	r	ug/L	0.50	7.69231		56	30-130	21.8	20
Surrogate: % Terphenyl-d14	2.063		ug/L		3.84615		54	30-130		
Surrogate: % Nitrobenzene-d5	1.734	r	ug/L		3.84615		45	30-130		
Surrogate: % 2-Fluorobiphenyl	2.114	r	ug/L		3.84615		55	30-130		

Notes and Definitions

c1	A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.
c3	A Blank spike was performed instead of a matrix spike
c4	A blank MS/MSD was analyzed with this batch.
l	This parameter is outside laboratory lcs/lcsd specified recovery limits.
m	This parameter is outside laboratory ms/msd specified recovery limits.
r	This parameter is outside laboratory rpd specified recovery limits.
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference
OG	The required Matrix Spike and Matrix Spike Duplicate (MS/MSD) for Oil & Grease method 1664B can only be analyzed when the client has submitted sufficient sample volume. An extra liter per MS/MSD is required to fulfill the method QC criteria. Please refer to Chain of Custody and QC Summary (MS/MSD) of the Laboratory Report to verify ample sample volume was submitted to fulfill the requirement.
pH	The method for pH does not stipulate a specific holding time other than to state that the samples should be analyzed as soon as possible. For aqueous samples the 40 CFR 136 specifies a holding time of 15 minutes from sampling to analysis. Therefore all aqueous pH samples not analyzed in the field are considered out of hold time at the time of sample receipt. All soil samples are analyzed as soon as possible after sample receipt.

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

Batch Summary

1816206

General Chemistry Parameters

1816206-DUP1

1816206-SRM1

1816206-SRM2

SC52773-01 (Outfall 003)

461099A

Subcontracted Analyses

CC17546-BLK

CC17546-LCS

CC17546-LCSD

CC17546-MS

CC17546-MSD

SC52773-01 (Outfall 003)

461248A

Subcontracted Analyses

CC18506-BLK

CC18506-DUP

CC18506-LCS

SC52773-01 (Outfall 003)

461279A

Subcontracted Analyses

CC19490-BLK

CC19490-LCS

CC19490-LCSD

SC52773-01 (Outfall 003)

SC52773-02 (Trip Blank)

461365A

Subcontracted Analyses

CC19445-BLK

CC19445-LCS

CC19445-LCSD

SC52773-01 (Outfall 003)

462669A

Subcontracted Analyses

CC19490-BLK

CC19490-LCS

CC19490-LCSD

CC19490-MS

CC19490-MSD

SC52773-01 (Outfall 003)

SC52773-02 (Trip Blank)